

D C B W E B P A G E T E A M

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DRAFT WEB SITE MANAGEMENT PLAN

Here is a draft of a web site management plan for the Dynamics and Control Branch. The purpose of this plan is to provide a framework for how the DCB web site should be organized and structured to assure that it achieves its intended purpose -- to support the NASA LaRC Strategic and Quality Framework (SQF). The main elements of the SQF are the three critical success factors (CSF's) -- Customer Value, Stakeholder Value, and Organizational Value. The design of the DCB web site has focused on contributing to each of the CSF's in a manner consistent with the charter and mission of the branch.

There are several elements of the management plan outlined below. This plan focuses on how the site is positioned in the branch infrastructure, how it relates to other branch functions (e.g., publications, meetings, administration), and how it should be coordinated within the branch infrastructure.

In addition to the management plan, there will be a separate implementation plan that suggests the order and manner in which the site should be developed over time and a styleguide that will assist in the development of content and functionality for the web site.

1.0 Purpose of the DCB Web Site

The purpose of the DCB Web Site is to support the mission and charter of DCB and the Langley Strategic and Quality Framework in terms of the three critical success factors; customer value, stakeholder value, and organizational value. The major focus of the site is customer value in terms of support of our primary customers -- aerospace technology and management. This will be accomplished by providing overviews of key accomplishments and products at several levels of specificity; from very general so as to be understandable by the general public and high level management to very specific so as to relate to the needs and interests of technical experts technical disciplines. In addition, access to actual

products such as papers and reports, computer codes, experimental data, and mathematical models, will be made available directly through the site.

Another major focus of the site, though one which will evolve more slowly, is organization value in terms of supporting the DCB staff and management. This will be done by providing effective and efficient ways to perform administrative and technical tasks using web-based tools. Some examples of the the types of things that could be implemented on the site are time and attendance recording, publication submission and editing, bibliography maintenance, standard form submission (travel, PR, leave, etc.). Since many of these functions require more advanced features of web technology more time will be required to implement them. Also, by publishing technical and management summaries of researcher accomplishments, publications, and products, the research will not be required to respond to as many urgent requests for information.

Support of stakeholder value will be accomplished with many of the features discussed above since much of the content will be developed with the general public and less technically sophisticated customers. In addition, some effort will be made to add content to the sight which would be of interest to students and the general public. Some examples include introductions to the disciplines of dynamics, control, and simulation, a gallery of photographs, videos, and animations relating to branch activities such as flight tests, wind-tunnel experiments, simulation studies, etc., and an index and glossary of common technical terms.

2.0 Management Plan Overview

The management plan consists of three parts -- Organizational Framework, Editorial Policies and Procedures, Content Development and Support. The organizational framework addresses the manner in which responsibility, authority, and oversight should be structured. The editorial policies and procedures are guidelines to support and encourage the integration of web site content development with the more traditional functions of the branch. Support for content development is intended to simplify the process of developing content for the web site and to help keep the scope of the site consistent with the activities and accomplishments of the branch in general.

The basis for the management plan is a set of objectives that should guide all decisions. These objectives are centered around the need to support the SQF and fulfill the branch charter and mission to an exceptional degree.

1. All content and functionality must be justified by enhancing customer, stakeholder, and/or organizational value.
2. All content must directly relate to achieving the mission of the branch.
3. All content must be reviewed for quality and accuracy.
4. All content must be timely.
5. The scope of the site should reflect a balanced representation of branch activities and accomplishments.
6. The site must be accessible to everyone -- customers, management, and the general public.
7. The site must maintain security of branch data.
8. The site should be relatively easy and inexpensive to support and maintain.

3.0 Organizational Framework

3.1 Editorial Team

The DCB web site should be managed by a editorial team with the support and assistance of the entire branch staff. The team should consist of representatives from branch management and the administrative and technical staffs. The editorial team should meet periodically (e.g., semiannually) or as needed to address web site related issues and problems. They should also regularly review the site to determine the degree to which it is achieving its intended purpose. The aspects of the site that the editorial team should be particularly sensitive to include -

- the degree to which the site is meeting the needs of customers, stakeholders, and staff,
- effectiveness in terms of the degree to which guidelines are being followed,
- currency in terms of the degree to which the site exploits available web technologies,
- timeliness in terms of the way in which content reflects branch activities and accomplishments.

This team would also have the primary responsibility for identifying, prioritizing, and recommending (to branch management) web site implementation decisions and development tasks. This would be accomplished by balancing the need to develop web content and functionality (consistent with the stated purpose and objectives) with the limited available resources (time, people, and money).

All decisions regarding the development and support of the DCB Web Site are ultimately the responsibility of branch and division management. All recommendations made by the various teams should be considered by the management and either accepted or denied with an explanation. Failure to do so should constitute a breach of the team charters and result in the team disbanding with no further responsibilities.

3.2 Administration Team

The actual operation of the site would be accomplished by a site administration team. The administration team should meet regularly or as needed to effectively maintain and support the site. This team would be responsible for carrying out and implementing the decisions of the editorial team. (Note: It is possible, and even likely, that some of the administration team would also be editorial team members.) Site administration can be effectively distributed as follows.

Webmaster(s) - The webmaster is responsible for keeping the site together and serving as the point of contact for users. The webmaster ensures that the content is presented in accordance with the style and layout guidelines for the site and the direction of the editors. The webmaster might also arrange and modify the content according to the guidelines. Finally, the webmaster is responsible for handling "customer service" issues and directing comments, suggestions, and questions to the appropriate people.

Administrator(s) - The administrator is responsible for keeping the hardware and software operating including upgrades, backups, configuration mods, etc. In addition, the administrator monitors and reports on usage and handles security issues (passwords, access restrictions, etc.). Most likely this person would be the current systems administrator.

Authors and script developers should be available to support the webmaster(s) and administrator(s) in the development of content and functionality. Representatives of the authors and developers should be part of the administrative team to address the needs and issues associated with their functions.

Author(s) - The authors are the key to the success of the site because they produce the content. The availability of very high powered HTML editing software and associated tools for graphics, animation, and other multimedia is increasing almost daily and anybody who can use a word processor can build a web page. With the help of these software tools, a style guide and templates for common content types every researcher can develop content for the site. Each researcher should be required to contribute to the site on a regular basis to maintain a current, interesting, and informative web site.

Script Developer(s) - Script developers write programs to extend the capabilities of the site such as enabling electronic forms, image maps (i.e., pictures with hot spots linked to other content), and other interactive features. Scripting is one area that is undergoing rapid change. Most of the new developments on the web such as Java, Shockwave, and other multimedia involve scripting in some sense. On the other hand the HTML editors will make adding advanced web technologies to pages easier all the time. In addition, there are many "standard" scripts readily available. It is likely that the task of developing scripts can be handled by contractors under task assignments but that some authors might do some script development (as may the administrator or webmaster).

3.3 Physical Implementation

The hardware and software server installation should be relatively inexpensive, secure, and require little overhead to support and maintain. The specifics regarding the selection of the web site installation should be the responsibility of the editorial team with input from the administrative team, branch management, and branch staff, where appropriate.

Issues that should be considered include -

- hardware and software costs,
- training requirements and costs,
- support availability and costs, and
- security issues.

4.0 Editorial Policies and Procedures

Below is an outline of the key procedures and policies that are required to effectively establish and maintain the DCB web site. It is intended to serve as a guide for developing mechanisms by which the development of content for and maintenance of the DCB web site is integrated into the normal operations of the branch. This is absolutely critical in keeping the site current and relevant to the ongoing activities of the branch and the critical success factors (CSF's) of the LaRC Strategic and Quality Framework (SQF).

Note that this outline, though fairly detailed, should be viewed as a starting point for a comprehensive plan for making the DCB web site integral to the daily business of the branch.

4.1 Content Control

Each author should be responsible for obtaining approval for all content added to the site (as with any other official publication). The branch head has ultimate editorial responsibility but may choose to delegate the responsibility of reviewing submissions to the editorial team or selected individuals. The editorial team may also request the development of new content or updates of existing content to support the objectives of the site.

4.2 Content Appearance and Functionality

The site administrator(s) should be responsible for assuring that all content satisfies the minimal standards for appearance and functionality. All content should conform to standard formats and styles approved by the editorial team. A style guide should be available that describes the recommended formats and styles.

4.3 Content Development and Submission

The development and submission of content should be integrated into standard branch office functions. In most cases the individual researcher will be responsible for providing the content in the appropriate format(s). However, resources and mechanisms for making the content web-compliant will be provided. The content should contribute to Customer, Stakeholder, and Organizational Value.

In order that the DCB web site be representative of the activities and accomplishments of the entire branch it is crucial that all each branch member participate in the development of web content. In order to assure that this occurs several mechanisms should be instituted.

- Standard administrative forms and published procedures and policies should be amended to include the web content requirements where appropriate.
- Performance plans should be amended to include the development of web site content as a required job element.
- Tools and guidance (e.g., style guides and templates) should be developed to assist in and simplify the task of developing web content.

4.4 Key Content Types

Many types of content should be developed for publication on the web site. Below are some of the types of information that are needed along with some guidance for development. Note that this is only a list of examples and should not be considered complete.

4.4.1 Publications

Publication procedures should be modified to include the systematic development of web site content. The content development is the responsibility of the individual researchers.

- Highlights - All publication highlights should be in formats that are conducive to publication on the web. The web should be considered the primary distribution point for publication highlights. (A format for highlights should be included in the style guide.)
- Bibliographies - The individual's and branch's web-based bibliographies should be updated to reflect all new publications.

- Papers and Reports - The actual paper or report should be accessible via the web either from the DCB web site or from LaTRS.
- Supplemental Content - Additional content related to the publication should be made available via the web. These might include demos, computer codes, numerical models, experimental data, animation, videos, and sound.

4.3.2 Products

All branch products conducive to publication via the web should be made available. In cases where the actual products are not conducive to publication or otherwise inappropriate for general dissemination (e.g., proprietary, confidential, LERD) their descriptions should be published on the web along with information on how to obtain them. The content development is the responsibility of the individual researchers.

4.3.3 Weekly Highlights

Key branch activities that currently appear as weekly branch and division highlights should be published on the web and used as the primary means of disseminating this information. The content development is the responsibility of the individual researchers.

4.3.4 Noteworthy Accomplishments and Events

Any individual or team accomplishment such as awards, promotions, patents/licenses, and invitations, and important events such as meetings, workshops, and conferences should be published in a timely fashion in the What's New @ DCB area. The content development is the responsibility of the individual researchers, team leaders, and branch management.

4.3.5 Key Ongoing Activities

Branch involvement in ongoing programs and projects should be represented on the web site in a sufficiently general form that an interested, semi-technically literate reader could understand and appreciate the contributions of DCB to the activity. The general descriptions should lead to progressively more detailed and technical information ultimately leading the reader to the specific technical information and products resulting from the activity. This should be a duty of the level 3 manager for that activity or a designee thereof.

4.3.6 Biographical Information

A minimal set of biographical information will be available for each DCB staff member. The types of information that will be required should be specified by the editorial committee and reflect the need to support the CSF's of the SQF. Such information might include title, education, recent and current work responsibilities and accomplishments, contact information, and bibliographies. Additional information could be included at the discretion of the individual staff member such as photographs, hobbies, professional societies, and links to related professional and personal information (previous employers, educational institutions, associates and colleagues, etc.). The content development is the responsibility of the individual researchers.

4.3.7 Introductory and General Information

In order to acquaint the new visitor with the organization and the web site introductory materials should be available. This is a key aspect of achieving Customer and especially Stakeholder Value from the site. The introductory information should, in simple terms, describe the mission of the branch and the basic elements of our technical discipline. This information might be presented in a "Welcome" section of the web site with additional information such as a glossary, FAQ's, related links, and cool stuff (pictures, videos, animation, demos, etc.). Branch management should be responsible for the development of this information.

4.3.8 Organizational Information

So as to acquaint the serious visitor with the organization detailed organizational information should be available. This is a key aspect of contributing to Customer Value. The organizational information should include detailed descriptions of the types of research and development performed and supported by the branch (both currently and in the past), staff rosters including permanent employees, visitors, students, and on-site contractors, physical directions and maps locating the branch geographically, organizational charts locating the branch in the Center organization, and descriptions of the facilities the branch manages and of which it makes frequent use. Branch management should be responsible for the development of this information.

4.3.9 Opportunities in DCB

Some visitors may be interested in research, educational, and/or employment opportunities in DCB. Appropriate information should be provided to provide to them.

- Sponsored Research - This should include potential research areas, funding information, application information and links, current and passed sponsored research projects, contact information and so forth.
- Cooperative Education - This should include examples of coop tasks (past, current, and proposed), names and contact info for previous DCB coops, links to the coop office, past coop reports, and possibly even evaluations.
- Fellowships - This should include fellowship and similar opportunities to spend time working in DCB (such as ASEE and NRC) and fellowships and similar opportunities for DCB folks to work elsewhere (e.g., Thompson and Sloan) along with links to the appropriate organizations.
- Employment - This should include information about the qualifications and background appropriate for employment in DCB, announcements of current opportunities, and links to the appropriate offices and organizations (e.g., LaRC Human Resources).

The branch office should be responsible for developing this content.

4.3.10 Navigational Information

Simple and intuitive navigation elements should be readily available on every web page. Some examples of the types of navigation tools that should be considered are listed below.

- Navigation Bars and Icons - A consistent set of navigation tools should be incorporated into the style guide to make navigation throughout the site reliable and consistent.

- Site Map - A graphical representation of the entire site should be available to facilitate navigation and understanding of the structure of the site.
- Index - A hyperlinked index should be available that assists the user who is interested in a specific area or term to locate the pertinent page(s).
- Outline Strip - An outline strip should always be available to assist the user to quickly navigate around the site.
- Search Engine - A large portion of the site should be searchable to assist the user to locate pages associated with specific terms of interest.
- Related Links - A catalog of links to sites with closely related content should be available to assist visitors to find additional information of interest. The specific links should be recommended by all branch staff to the editorial committee for consideration.
- Modification Log - A log of changes to the site should be available to assist the frequency visitor in determining what new content has been added to the site (and what old content has been removed).
- Recommended Plug-ins or Helpers - Links to browser plug-ins and helper applications should be provided to assist the visitor in getting maximum benefit from the site by making it easy to configure their systems to access the content. These links should be strategically placed for maximum effectiveness. The content developer should include the appropriate link(s) within their pages.

The development of these tools is primarily the responsibility of the editorial committee.

4.3.11 Contact Information

All content should indicate the responsible individual and provide a means by which that person can be contacted (including e-mail, phone, Snailmail).

4.3.12 Graphics

Graphical content should be developed to support the effectiveness of the web site. Standardized elements such as logos, backgrounds, icons, horizontal rules and so forth should be professionally developed where appropriate. The standardized graphical elements should be included in the styleguide for the benefit of those developing content.

5.0 Content Development and Support

There are many means by which content can be developed for publication on the web. The mechanism of choice depends on several factors -- the intended application of the information, the experience of the developer, and the size and form of the content. Several mechanisms for developing web content should be available to the staff to reduce the barriers to contributing content, to make the development process as efficient as possible, and to make maximum use of the appropriate technologies. Below are several of the current means by which content can be developed along with recommendations for how they should be supported within the branch.

5.1 Raw HTML

The development of web content ultimately involves the development of HTML code. The lowest overhead mechanism to generate the content is to use a text

editor to include HTML tags. This requires fairly detailed knowledge of HTML. Therefore, training should be available to learn HTML and reference materials (e.g., texts and manuals) should be available for self-directed learning.

5.2 HTML Editors

Another means for developing HTML is to use an editor (e.g., Claris HomePage, Adobe PageMill, PageSpinner, BBedit). These editors provide a WYSIWYG approach to HTML development and greatly speed the process once proficiency is achieved. Access to HTML editors should be given to everyone in the branch. This can be accomplished by hosting one or more of these programs on a public computer.

5.3 PDF Writers

While HTML is the most versatile way to publish on the web it is not suited for certain applications such as publishing long documents with many figures and/or equations. A popular alternative is PDF (portable document format) which is based on postscript. The flexibility of this format is attractive in that it can be easily generated from any printable document but can also allow web-like enhancements to be added such as hyperlinks and anchors. In addition, free browser plug-ins and helper applications make it easy to view and print these documents using the web.

- Access to PDF generation capability should be available to everyone in the branch. File generation is accomplished with a chooser extension in Macintosh computers. Everyone should have the extension.
- Enhancements such as hyperlinks are achieved with additional "editor" software. Access to these tools should be made available in a manner similar to that used for HTML editors.

5.4 RTF to HTML Converters

Another way to generate web-compatible documents is to convert word processing files. One conversion method is to save the word processing file in Rich Text Format (RTF) and use converter software to save the file in HTML format. This software should be made available for each staff member. In addition, the style guide should include templates for standard document templates in Word (and possibly other popular word processors) that can be readily converted to DCB web site compatible documents.

5.5 Graphics

The web supports primarily two graphic formats, GIF and JPEG. Since most graphics generated in DCB are not in these formats conversion tools should be readily available. In addition, guidelines for how to best produce and/or convert graphics for publication on the web (i.e., to reduce loading time and minimize file space requirements) should be included in the style guide.

5.6 Quicktime

Animation, video, and audio can be supported on the web using Quicktime. Quicktime generation software is widely available and should be provided to individuals who have specific needs.

5.7 Scripting Tools

Enhancements to basic web documents can be achieved using cgi (common gateway interface) scripts. CGI scripts are needed for interactivity such as imagemaps, forms, and database access. Scripting training, manuals, and tools should be made available as the need is demonstrated.

5.8 Java

An rapidly evolving mechanism for enhancing web-based applications. Support for Java training, manuals, and tools should be made available as the need is demonstrated.

5.9 Others

The means by which web-based content can be developed is a rapidly evolving area. It is recommended that the editorial committee be responsible for regularly surveying the landscape and identifying attractive opportunities to further support the CSF's via the DCB web site.